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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,214	08/08/2001	Takaya Sato	001-03-033	4316
35870	7590	02/09/2005	EXAMINER	
APEX JURIS, PLLC 13194 EDGEWATER LANE NORTHEAST SEATTLE, WA 98125			MERCADO, JULIAN A	
			ART UNIT	PAPER NUMBER

1745

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

09/807,214

Applicant(s)

SATO ET AL.

Examiner

Julian Mercado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Remarks*

This Office action is responsive to applicant's amendment filed November 12, 2004.

Claims 1-13 are pending.

### *Claim Rejections - 35 USC § 102 and 103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hayashi et al. (JP 8-287951).

Claims 1-5 and 11-13 are rejected under 35 U.S.C. 103(a) as obvious over Bai et al. (U.S. Pat. 5,744,258) in view of Hayashi et al.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bai et al. in view of Hayashi et al. as applied to claims 1-5 and 11-13 above, and further in view of Dahn et al. (U.S. Pat. 4,969,254).

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The above rejections have been discussed in detail in the previous Office action. The rejection(s) is maintained for the reasons already of record and for the additional reasons to follow. The examiner notes that the claims have been amended to further recite that the ion-conducting polymer dissolves lithium salts at a concentration of at least 0.1M and shows a resulting electrical conductivity of  $10^{-8}$  S. As discussed in the prior Office action, in Hayashi et al. the polyaniline polymer has properties relating to ion-conductivity especially in consideration of applicant's definition of an ion-conducting polymer as one which can dissolve lithium salts, as well as Hayashi et al.'s specific teaching that a lithium salt sulfonic-acid anion complex is easily permeated into the polymer active material. (refer to applicant's specification on page 12 section (f), see Hayashi et al. at par. [0006], "[t]hese electrolytes have the effectiveness... to permeate the active material") These electrolytes are used at a concentration of 0.2 moles relative to one liter of solvent, therefore, the concentration equals 0.2 M. (pars. [0009 et seq.] As to ion conductivity, Hayashi et al. teaches a criticality of the weight percentage of the active material, "[m]ore than 98wt%, there is a problem in respect of binding capacity or *ion conductivity*". (par. [0005], emphasis added) Clearly, ion-conductivity is a property inherently and explicitly disclosed in Hayashi et al.

With respect to Bai et al., while the patentees do not explicitly teach the claimed dissolving of lithium salts at a concentration of at least 0.1M and a resulting electrical conductivity of  $10^{-8}$  S, it would have been obvious to one of ordinary skill in the art to apply the teachings of Hayashi et al. with respect to the concentration of lithium salts in Bai et al.'s invention, consistent with Bai et al.'s teaching that the material is desirably "porous to counter ions" provided for by the electrolyte. (Bai et al., col. 2 line 65-67, col. 3 line 35-38)

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As to the resultant electrical conductivity, given that the ion conducting polymer in Hayashi et al. and Bai et al. is identical to that disclosed and claimed by applicant given its ionic conductivity and concentration of lithium salt which encompasses applicant's claimed range, it would naturally flow for the polymer to inherently have the same electrical conductivity as claimed, absent of a showing by applicant that the claimed invention distinguishes over the reference. *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) and *In re Spada*, 15 USPQ 2d 1655 (Fed. Cir. 1990)

***Response to arguments against Hayashi et al.***

Applicant submits that the polyaniline in Hayashi et al. "relates to electronic conductivity", citing A.G. MacDiarmid et al., Mol. Cryst. Liq. Cryst pp. 121 and 173 and more specifically that polyaniline "has been synthesized in various forms both chemically and electrochemically in aqueous media". [emphasis as submitted] In reply, and as may be appreciated from the cited portion, the examiner asserts that MacDiarmid et al. discloses the synthetic methods for polyaniline and not its mode of operation *per se*. As to the active materials not having ion migration, as cited above Hayashi et al. teaches a criticality of the weight percentage of the active material, "[m]ore than 98wt%, there is a problem in respect of binding capacity or *ion conductivity*". (par. [0005], emphasis added) As above, the examiner asserts that ion-conductivity is a property inherently and explicitly disclosed in Hayashi et al.

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***Response to arguments against Bai et al. and against Dahn et al.***

Arguments against Bai et al. and Dahn et al. appear to be directed to these references failing to remedy alleged differences between Hayashi et al. and the present claims. However, in view of Hayashi et al. being maintained for the reasons discussed above, the rejection based on Bai et al. and Dahn et al. is subsequently maintained for the reasons discussed in the previous Office action.

***Response to Amendment***

The declaration under 37 CFR 1.132 filed November 12, 2004 is insufficient to overcome the rejection of the pending claims based upon Hayashi et al. as set forth in the last Office action because the showing is not germane to the rejection at issue, as neither Hayashi et al. nor any of the other primary reference teachings (Bai et al.) teach a PVdF polymer.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

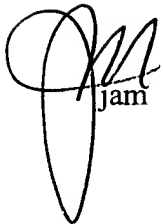
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



jam



**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**